**Información relevante para el plan de formación: CVA del IP, últimas publicaciones, el historial científico-técnico, resumen de la línea de investigación donde se incorporaría la persona beneficiaria o las actividades o programas que se desarrollan en el grupo de investigación, etc.**

**CV PI-1: Marta I. Sánchez marta.sanchez@ebd.csic.es**

PhD in Ecology (National Prize, SEO/BirdLife; 2005) and currently Senior Researcher at EBD-CSIC. Two permanent position as Lecturer at the Universities of Seville and Cadiz (Talent Attraction Programme). Main research line on trophic interactions and dispersal processes in aquatic ecosystems under different scenarios of global change; broadly interested on the role of birds as bioreactors of pollutants (heavy metals, nutrients, plastics), invasive species and antibiotic resistant bacteria. Head of EcoGlob, a multidisciplinary research group integrated by 5 senior researchers and their PhD students and postdocs, from the University of Seville and EBD-CSIC, associated to the Andalusian Research Development and Innovation Plan (PAIDI). Entire research career uninterruptedly funded by national public competitive calls (10 grants or research contracts, including a Ramón y Cajal Fellowship, the most prestigious fellowship in the national Spanish scientific system). Working at 5 different high level research centres and developed constructive research relationships with more than 130 scientists. Actively participated in 35 projects, being PI of 13 of them (3 Plan Nacional projects, 1 Excelencia Project from the Andalusian government, two international projects (PICS international bilateral project (CNRS-CSIC) and KIM Sea and Coast), 1 BBVA project, etc; total funding as PI of more than 1K from 2014). Scientific production including 86 publications (75 in SCI journals, 84% in Q1 during the last 10 years) including high impact journal such as Ecology Letters, Plos Pathogens, Global Change Biology, Conservation Biology, etc. POSITIVE evaluation of research productivity over 18 years (3 sexenios i.e. 3 periods of 6 years of research). Supervision of 5 PhD students (completed with the highest mark, European Mention and international prizes), 4 postdocs, 15 MSc/MRes Thesis, 4 Undergraduate thesis and 8 internships from different European programs (Erasmus+, Leonardo Da Vinci) and 8 of other programs. Science popularisation activities including 9 papers, the participation in the Project Someone to look up to (Prize «Rosa Regás» to coeducation projects), participation in main popularization events and festivals to promote science (European Researchers Night, Pint of Science, Science Fairs); vulgarization talks (International Day of Woman and Girls on Science, CRE-Divulga, Martes ornitológicos, etc). High media impact of the research (>100 news in different media, including BBC, Nature, National Geographic). Member of several expert committees and evaluator for national and international research agencies, including the National Agency for Evaluation and Forecasting (ANEP), Agencia Valenciana de Evaluación y Prospectiva (AVAP), Spanish State Research Agency (AEI), Austrian Science Fund (FWF), Comisión Nacional de Investigación Científica
y Tecnológica (CONICYT) de Chile, etc. Academic editor of PeerJ, PlosOne, Associate editor of Frontiers in Ecology and Evolution, habitual reviewer for more than 20 SCI journals.

**Publications last 5 years (from 2018)**

Cano-Barbacil, C., Carrete, M., Castro-Díez, P., Delibes-Mateos, M., Jaques, J. A., López-Darias, M., ... & García-Berthou, E. (2023). Identification of potential invasive alien species in Spain through horizon scanning. *Journal of Environmental Management*, *345*, 118696.

Amat, J. A., Varo, N., **Sánchez, M. I.**, Green, A. J., Hornero-Méndez, D., Garrido-Fernández, J., & Ramo, C. (2023). Physiological strategies of moult-migrating Black-necked Grebes (Podiceps nigricollis) in a polluted staging site according to blood chemistry. *Avian Research*, 100118.

López-Calderón, C., Martín-Vélez, V., Blas, J., Höfle, U., **Sánchez, M.I.,** Flack, A., Fiedler, W., Wikelski, M., Green, A.J. 2023. White stork movements reveal the ecological connectivity between landfills and different habitats. *Movement Ecology*, *11*(1), 1-13

Juan Manuel Peralta-Sánchez, Albán Ansotegui, Francisco Hortas, Stella Redón, Víctor Martín-Vélez, Andy J. Green, María J. Navarro-Ramos, Adam Lovas-Kiss and **Marta I. Sánchez.** 2023. Seed Size, Not Dispersal Syndrome, Determines Potential for Spread of Ricefield Weeds by Gulls. *Plants*

Oficialdegui, F. J., Zamora-Marín, J. M., Guareschi, S., Anastácio, P. M., García-Murillo, P., Ribeiro, F., ... & Oliva-Paterna, F. J. (2023). A horizon scan exercise for aquatic invasive alien species in Iberian inland waters. *Science of the Total Environment*, *869*, 161798.

Antónia Juliana Pais-Costa, Eva J. P. Lievens, Stella Redón, **Marta I. Sánchez**, Roula Jabbour-Zahab, Pauline Joncour, Nguyen Van Hoa, Gilbert Van Stappen, Thomas Lenormand. 2022. Phenotypic but no genetic adaptation in zooplankton 24 years after an abrupt +10°C climate change. **Evolution Letters** *6*(4), 284-294.

Mejías, C., Martín, J., Santos, J. L., Aparicio, I., **Sánchez, M. I.**, & Alonso, E. (2022). Development and validation of a highly effective analytical method for the evaluation of the exposure of migratory birds to antibiotics and their metabolites by faeces analysis. ***Analytical and Bioanalytical Chemistry***, 1-14.

Martín-Vélez V, **Sánchez MI**, Lovas-Kiss A, Hortas F, Green AJ. 2021. Dispersal of aquatic invertebrates by lesser black-backed gulls and white storks within and between inland habitats. **Aquatic Sciences** *84*(1), 10.

Pais-Costa, A. J., **Sánchez, M. I.,** Taggart, M. A., Green, A. J., Hortas, F., Vinagre, P. A., ... & Martinez-Haro, M. (2021). Trace element bioaccumulation in hypersaline ecosystems and implications of a global invasion. *Science of The Total Environment*, 149349.

Stella Redón, Gonzalo Gajardo, Gergana P. Vasileva, **Marta I. Sánchez**, Andy J. Green. 2021. Local effects versus latitudinal patterns in abundance and species diversity of avian cestodes in South American brine shrimps. **Water**

Jarma, D., **Sánchez, M. I.**, Green, A. J., Peralta-Sánchez, J. M., Hortas, F., Sánchez-Melsió, A., & Borrego, C. M. (2021). Faecal microbiota and antibiotic resistance genes in migratory waterbirds with contrasting habitat use. *Science of the Total Environment*, *783*, 146872.

Martín-Vélez, V., Hortas, F., Taggart, M.A., Green, A.J., O´Hanlon N.J., **Sánchez, M.I.** 2021. Spatial variation and biovectoring of metals in gull faeces. **Ecological Indicators**. 125: 107534

Martín Vélez, Víctor; Van Leeuwen, Casper; **Sánchez, Marta I.**; Hortas, Francisco; Shamoun-Baranes, Judy; Thaxter, Chris; Lens, Luc; Camphuysen, Cornelis; Green, Andy. 2021. Spatial patterns of weed dispersal by wintering gulls within and beyond an agricultural landscape. **Journal of Ecology** *109*(4), 1947-1958.

Víctor Martín-Vélez, Ádám Lovas-Kiss, **Marta I. Sánchez** and Andy J. Green. 2020. Endozoochory of the same community of plants lacking fleshy fruits by storks and gulls. **Journal of Vegetation Science** *32*(1), e12967.

Pais-Costa AJ, **Sánchez MI**, Vieira N, Green AJ, Marques JC, Martínez-Haro M. 2020. Effect of acute exposure of Hg and Zn on survival of native and invasive Artemia from wild populations exposed to different degrees of environmental contamination. Ecological Indicators *18*, 106739.

Acevedo L, Oficialdegui FJ, **Sánchez MI**, Clavero M. 2020. Historical, human and environmental drivers of genetic diversity in the red swamp crayfish (Procambarus clarkii) invading the Iberian Peninsula. Freshwater Biology.

Oficialdegui F., **Sánchez MI**, Clavero M. 2020. One century away from home: how the red swamp crayfish took over the world". Reviews in Fish Biology and Fisheries.

Oficialdegui, F. J., Delibes Mateos, M., Green, A. J., **Sánchez, M. I.**, Boyero, L., & Clavero, M. (2020). Rigid laws and invasive species management. Conservation Biology, 35(4), 1047-1050).

Oficialdegui FJ, **Sánchez MI**, Lejeusne C, Pacini N, Clavero M. 2020. Brought more than twice: the complex introduction history of the red swamp crayfish into Europe. Knowledge and management of aquatic ecosystems

**Sánchez MI,** Biron, D. 2019. Host manipulation by parasites. Frontiers in Ecology and Evolution, 7, 369.

Lovas-Kiss A, **Sánchez MI**, Wilkinson DM, Coughlan N, Alves J, Green AJ. 2019. Shorebirds as important vectors for plant dispersal in Europe. Ecography *42*(5), 956-967

Pais-Costa AJ, Varó I, Martinez-Haro M, Almeida-Vinagre P, Green AJ, Hortas F, Marques JC, **Sánchez MI**. 2019. Life history and physiological responses of native and invasive brine shrimps exposed to Zinc: insights into the pollution resistance hypothesis. Aquatic Toxicology *210*, 148-157

Céspedes V, Green AJ, Stoks R, **Sánchez MI**. 2019. Eco-immunology of native and invasive water bugs: insights from phenoloxidase activity. 2019. Biological Invasions *21*(7), 2431-2445

Martín-Vélez V, **Sánchez MI**, Bouten W., Shamoun-Baranes J., Thaxter C.B., Stienen E.W.M., Camphuysen K., Green A.J. 2019. Quantifying changes in nutrient inputs to a fluctuating shallow lake by lesser black-backed gulls over seven winters. Freshwater Biology *64*(10), 1821-1832

Rodríguez-Estival J, **Sánchez MI**, Ramo C, Varo N, Amat JA, Garrido-Fernández J, Hornero-Méndez D, Martínez-Haro M, Ortiz-Santaliestra ME, Taggart M, Green AJ, Mateo R. 2019. Exposure of black-necked grebes (*Podiceps nigricollis*) to environmental pollution during the moulting period in the Odiel Marshes, Southwest Spain. Chemosphere *216*, 774-784

Céspedes V, Valdecasas AG, Green AJ, **Sánchez MI**. 2019. **Waterboatman** survival and fecundity **is** related to ectoparasitism and salinity stress. Plos One *14*(1), e0209828

Oficialdegui, F.J., **Sánchez, M.I**., Monsalve-Carcaño, Luz Boyero, Bosch, J. 2019. The invasive red swamp crayfish (*Procambarus clarkii*) increases infection intensity of the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*). Biological Invasions 1-11

Oficialdegui, F. J., Clavero, M., **Sánchez, M. I**., Green, A. J., Boyero, L., Kawai, T., Klose, K., Michot, T. C., Lejeusne, C. 2019. Unravelling the global invasion routes of a worldwide invader, the red swamp crayfish, *Procambarus clarkii*. Freshwater Biology

Céspedes V, Coccia C, Carbonell JA, **Sánchez MI**, Green AJ. 2019. The life cycle of the alien boatman *Trichocorixa verticalis* (Hemiptera, Corixidae) in saline and hypersaline wetlands of south-west Spain. Hydrobiologia *827*(1), 309-324.

Lovas‐Kiss, Á., **Sánchez, M. I.**, Molnár, A., Valls, L., Armengol, X., Mesquita‐Joanes, F., & Green, A. J. (2018). Crayfish invasion facilitates dispersal of plants and invertebrates by gulls. *Freshwater Biology*, *63*(4), 392-404.

Lenormand T, Nougué O, Jabbour-Zahab R, Arnaud F, Dezileau L, Chevinand LM, **Sánchez MI**. 2018. Resurrection Ecology in *Artemia*. **Evolutionary Applications**, 11(1), 76-87.

**CV PI-2: Manuela G. Forero** **gforero@ebd.csic.es**

Manuela G. Forero is actually a tenure researcher at the Estación Biológica de Doñana (EBD-CSIC) in the Conservation Biology Department. From 2019 I am the head of this Department and from 2011 I am also the responsible researcher of the Stable Isotope Laboratory (LIE-EBD) in this research institute. I finished my PhD at the University of Sevilla in 1998, and it covered important research on the evolution of dispersal behavior in birds using as model a raptor population in Doñana National Park. The importance of this research was reflected in numerous publications in high impact journals as can be seen in the publications indicated below. From them on, during my postdoctoral period in Canada (University of Saskatchewan, supported by a postdoctoral grant from the Spanish Government) and in Spain (IMEDEA, CSIC-UIB, Ramon y Cajal contract) I developed different research lines, some of them already started during the predoctoral period: Ec*ophysiology* (role of carotenoids in birds, role of genetic and environmental factors, this line was developed in collaboration of University of Saskatchewan during my postdoctoral period); *Ecology of parasitism in birds* (blood parasites and host relationship in birds); *Ecoinmunology* (Immune cellular response in birds, including raptors, passerines and seabirtds); *Behavioural Ecology* (sexual selection, evolution of dimorphism in birds and also numerous studies on evolution of dispersal behavior in birds); *Ecology applied to conservation* (numerous studies with clear implications in conservation, related to breeding and foraging habitat conservation, impact of introduced depredators, interactions with anthropogenic activities as fisheries, etc); and the most recent and important research line from my postdoctoral period to the present, *Stable Isotope Ecology* with special attention to the study of trophic ecology, but also with dedication to other applications of this approach such as the study of migration and movements in birds, interaction of seabirds with fisheries and the study or water quality and dynamics. Is in this field where I have been working more intensively from my incorporation as tenure research in 2008 at the EBD. During this last period of my career I have participated and led numerous research projects that implement stable isotopes approach and telemetry to the study of trophic ecology and interaction with fisheries in marine systems, including seabirds and cetaceans. My research team (including postdoc and predoctoral researchers and technicians) has an important international collaboration network that has allowed us to carry out research in seabird communities in numerous locations (Phillip Island, South West Australia, Argentinean Patagonia, Bird Island (South Georgia), Svalbard Islands (Norway). In addition to the study of trophic ecology, I have also deepened in the application of stable isotopes to the study of two migration and movements in birds and the study of water quality and dynamics. This scientific track record includes a relevant number of peer-reviewed publications, some of them reflected bellow, but also numerous contributions to international and national conferences and scientific dissemination activities. Within this research framework, I have supervised four PhD, all of them with a high scientific production, and supervised seven master students and numerous students from different academic programs. My research has been supported by national and international grants being the main researcher in many of them.

**Publications last 5 years (from 2018)**

Yemisken, E., **Forero, M.G.**, Megalofonou, P., Eryilmaz, L. Navarro, J. 2018. Feeding habits of three Batoids in the Levantine Sea (northeastern Mediterranean Sea) based on stomach content and isotopic data. Journal of the Marine Biological Association of the United Kingdom 98(1):89-96, Special Issue- Rhodes EMBS 2016 [doi.org/10.1017/S002531541700073X](https://doi.org/10.1017/S002531541700073X)

Giménez, J., Louis, M., Barón, E., Ramírez, F., Verborgh, P., Gauffier, P., Esteban, R. El[j](file:///C%3A%5CUsers%5CUsers%5CUsuario%5CDesktop%5C2019_Plan_Nacional%5COPCI%C3%93N_ARGENTINA%5CDocumentos%20equipo%20de%20trabajo%5Cj)arrat, E., Barceló, D., **Forero, M.G.**, de Stephanis, R. 2018. Towards the identification of ecological management units: a multidisciplinary approach for the effective management of bottlenose dolphins in the southern Iberian Peninsula. Aquatic Conservation: Marine and Freshwater Ecosystems 28:205-2015. doi:10.1002/aqc.2814

Afán, I., Giménez, J., **Forero, M.G.**, Ramírez, F. 2018. An adaptived method for identifying marine areas of high conservation priority. Conservation Biology 32(6):1436-1447. <https://doi.org/10.1111/cobi.13154>

Paredes, I., Ramírez, F., **Forero, M.G.**, Green, A.J. 2018. Stable isotopes in helophytes reflect anthropogenic nitrogen pollution in entry streams at the Doñana World Heritage Site. Ecological Indicators 97:130-140. <https://doi.org/10.1016/j.ecolind.2018.10.009>

Afán, I., Navarro, J., Grémillet, D., Coll, M., **Forero, M.G.** 2019. Maiden voyage into death: are fisheries affecting seabird juvenile survival during the first days at-sea? Royal Society Open Science 6: 181151

Hovinen, J.E.H., Tarroux, A., Ramírez, F., **Forero, M.G.**, Descamps, S. 2019. Relationships between isotopic ratios, body condition and breeding success in a High Arctic seabird community. Marine Ecology Progress Series 613:183-195. https://doi.org/10.3354/meps12886

Yemisken, E., Navarro, J. **Forero, MG.**, Persefoni, M., Lutfiye, E. 2019. Trophic partitioning between abundant demersal sharks coexisting in the North Aegean Sea. Journal of the Marine Biological Association of the United Kingdom 99, 1213-1219. https://doi.org/10.1017/S0025315419000110

Navarro J., Grémillet D., Afán I., Miranda F., Bouten W., **Forero M.G.**, Figuerola J. 2019 Pathogen transmission risk by opportunistic gulls moving across human landscapes. Scientific Reports 9, 99, 1213-1219

Lopezosa, P., **Forero, MG**., Ramírez, F., Navarro, J. (2019) Individuals within populations: no evidences of individual specialization in the trophic habits of an opportunistic predator Estuarine, Coastal and Shelf Science. 229:106427. https://http//www.elsevier.com/locate/ecss

Ramírez, F., Afán, I., Bouten, W., Carrasco, J.L., **Forero, M.G.**, Navarro J. 2020. Human shapes the year-round distribution and habitat use of an opportunistic predator. Ecology and Evolution 00:1-10. . <https://doi.org/10.1002/ece3.6226>

Parra-Torres. Y., Ramirez, F, Afán, I., Aguzzi, J., Bouten, W., **Forero, M.G.**, Navarro, J. 2020 Behavioral rhythms of an opportunisitic predator living in anthropogenic landscapes. Movement Ecology 8, 17. https://doi.org/10.1186/s40462-020-00205-x

Paredes, I., Ramírez, F., Aragonés, D., Bravo, M.A., **Forero, M.G.**, Green, A. 2021. Ongoing anthropogenc eutrophication of the catchment area threatens the Doñana World Heritage Site (South-west Spain). Wethland Ecology and Management 29:41-65. https://doi.org/10.1007/s11273-020-09766-5.

Beal, M., Diaz, M.P., Phillips, R.A……**Forero, M.G.** et al. 2021. Global political responsibility for the conservation of albatrosses and large petrels.Sci. Adv.7, eabd7225(2021).DOI:[10.1126/sciadv.abd7225](https://doi.org/10.1126/sciadv.abd7225)

Ramírez, F., Vicente-Sastre, D., Afán, I., Igual, J.M., Oro, D., **Forero, M.G.** 2021. Stable isotopes in seabirds reflect changes in marine productivity patterns. Marine Ecology Progress Series 662: 169-180.  DOI: https://doi.org/10.3354/meps13615

Clark, B.L., Carneiro, A.P.B., Pearmain, E.J. ……..**Forero, M.G.** et al. 2023. Global assessment of marine plastic exposure risk for oceanic birds. Nat Commun 14, 3665. https://doi.org/10.1038/s41467-023-38900-z

**Research Line**

The research line combines different disciplines, including Dispersal Ecology, Movement Ecology, Trophic Ecology, Microbiology and Clinical Pathology. The research team involves a multidisciplinary collaboration (with previous successful collaborative experience) between ecologists working on bird-mediated dispersal processes, scientist experts in trophic and movement ecology, and microbiologists with wide expertise in the study of antibiotic-resistant bacteria.

**Training program**

This project provides an excellent context for a PhD student to develop his/her thesis. It includes key questions poorly understood in plastic pollution combining different aspects of dispersal ecology, movement ecology, trophic ecology, molecular biology, clinical pathology and microbiology. The training capacity of the team is guaranteed by the number of PhD thesis completed in the last ten years (see section below). Moreover, the team have trained more than 55 Master Thesis Projects. EBD-CSIC carries out multidisciplinary research of the highest standard in ecology and biodiversity conservation, and has broad international experience, with all the facilities to ensure an efficient integration of new researchers through the “manual de acogida”. Moreover, the high number of students in the respective groups of the IPs guarantee a quick integration. The applicant will be provided with an office space and a computer. All permits for laboratory use will be provided immediately. Although the student would spend most of the time working at EBD under the supervision of the IPs, he/she may receive training by different members of the research team. For example, we would foresee training periods at ICRA under the supervision of CB for the molecular part of the project (plastisphere). The national and international network of collaborations of team members would expand possibilities of applying for short stays to improve their technical skills or to acquire new methodologies with leading experts in their respective fields (for example JSB from Netherlands).

The Training Research Plan include:

1) FTIR analysis, Stable isotope analysis and GIS and management and analyses of movement data

2) Laboratory procedures to processing faeces and pellets samples under the stereomicroscope

3) Molecular techniques for microbial communities and the quantification of ARGs (DNA extraction, purification and isolation, PCR and qPCR, processing samples for metagenomic analysis, etc)

4) Bioinformatic pipelines for the analyses of gene sequences including datasets from next generation sequencing technologies and metagenomics

5) Assistance to training courses organized by the CSIC, that includes statistical analysis, writing manuscripts, English, stable isotopes, as well as attendance to EBD seminars once per week.

6) Training Animal welfare (by EBD-CSIC) and capturing and managing birds

7) The student will have the opportunity to attend different congress every year.

8) Supervisors and the student will meet every two weeks in order to know the progress and set up short-term objectives and future activities within the framework of the project.

**Theses completed or in progress within the scope of the research team (last 10 years)**

• Researcher: Vanessa Céspedes. Project: Role of Trichocorixa verticalis and ectoparasites in the corixidae communities in SW Spain. Date: 2019. Supervisor: MI Sánchez, AJ Green. Awards: AIL

• Researcher: Fco. Javier Oficialdegui. Project: Invasion of the red swamp crayfish Procambarus clarkii: introductions, impacts and management. Date: 2019. Supervisor: MI Sánchez, M Clavero, L Boyero. Awards: International Award Fluviaro (Portugal)

• Researcher: Victor Martín-Vélez. Project: Migratory waterbirds as key dispersal vectors of exotic species, nutrients and contaminants. Date: 2019: Supervisor: MI Sánchez, AJ Green. Awards: ISSLR

• Researcher: Juliana País-Costa. Project: Climate change and pollutants as synergic drivers of biological Invasions. Date: 2022. Supervisor: MI Sánchez, M Martínez-Haro

• Researcher: Dayana Jarma. Project: Migratory birds as dispersal vectors of antibiotic resistant bacteria. Date: ONGOING. Supervisor: MI Sánchez, Francisco Hortas

• Researcher: Julián Cano Povedano. Project: Waterbirds as dispersal vectors of plastics. Date: ONGOING. Supervisor: MI Sánchez, AJ Green

• Researcher: Yang Zhao. Project: Birds as dispersers of invertebrates in South Spain. Date. ONGOING.

Supervisor: MI Sánchez, AJ Green

• Researcher: Inma Noguerola. Project: Chemolithotrophic microbial activity in relation to S transformations in oxic/anoxic interfaces of a stratified karstic lake. Date: 2016. Supervisor: C Borrego

• Researcher: Olga Auguet. Project: Contribution of microbial biofilms to sulfide and methane emissions in sewer systems and mitigation strategies. Date: 2016. Supervisor: C Borrego. Awards: Extraordinary Ph.D. Award of the University of Girona

• Researcher: Mireia Fillol. Project: Insights into the distribution and ecological role of members of the archaeal Phylum Bathyarchaeota. From the global to the local scale. Date: 2017. Supervisor: C Borrego

• Researcher: Sergi Compte. Project: Factors affecting the distribution, abundance and diversity of uncultured archaeal groups in freshwater sediments. Date: 2018. Supervisor: C Borrego

• Researcher: Jessica Subirats. Project: Influence of anthropogenic pollution on the prevalence, maintenance and spread of antibiotic resistance in aquatic microbial communities. Date: 2018. Supervisor: C Borrego. Awards: Extraordinary Ph.D. Award of the University of Girona

• Researcher: Isabel Afán Asencio. Project: Implementación de análisis espaciales en la Ecología de Aves Marinas. Date: 2016. Supervisor: MG Forero and Fco Ramírez. Awards: Permanent position at LAST.

• Researcher: Joan Giménez Verdugo. Project: Ecología de depredadores apicales en el Golfo de Cádiz. Date: 2018. Supervisor: MG Forero, R de Stephanis. Awards: Caixa Foundation grant

• Researcher: Irene Paredes Losada Project: Causes and consequences of declining water quality in Doñana: a multidisciplinary approach Date: 2020. Supervisor: MG Forero, F Ramirez, AJ Green.